

Nakano et al.
U.S.S.N. 10/527,352
Page 10 of 14

REMARKS

Claims 1-28 are pending in the application. Claim 1 has been amended. No new matter has been added by virtue of the amendments, support being found throughout the specification and from the pending claims.

1. Abstract

The abstract has been amended as requested by the Office. No new matter is added. Applicants respectfully submit that the abstract contains fewer than 250 words, fewer than 25 lines, and is presented in the form of a single paragraph (with formulae (A) and (1) being indented but not forming new paragraphs).

2. 35 U.S.C. §112 Rejections

Claims 1-28 are rejected under 35 U.S.C. §112, second paragraph. Applicants have amended claim 1 for clarification. Applicants respectfully submit that the claims comply with 35 U.S.C. §112.

3. 35 U.S.C. §102 Rejections

Claims 1-14 are rejected under 35 U.S.C. § 102(b or e) over U.S. Patent No. 4,541,884 to Cogswell et al. (hereinafter "Cogswell") and U.S. Publication No. 2003/0175488 to Asthana et al. (hereinafter "Asthana"). Applicants respectfully traverse.

Applicants recite, in independent claim 1, a polycarbonate-based resin composition for extrusion molding using a sizing die. The polycarbonate-based resin composition comprises, as a main component, a polycarbonate having a viscosity-average molecular weight of 17000 to 27000 and containing main repeating units represented by formula (A). Further, the amount of proton (Pa) and amount of proton (Pb) per 1 g of the polycarbonate which are calculated from respective integral values of a signal (a) detected at $\delta = 7.96$ to 8.02 ppm and a signal (b) detected at δ

Nakano et al.
U.S.S.N. 10/527,352
Page 11 of 14

= 8.11 to 8.17 ppm in ^1H -NMR spectra thereof as measured in a deuterated chloroform solvent, satisfy formula (1).

When Applicants' polycarbonate resin composition, having a specific branch chain structure defined by ^1H -NMR spectra thereof, is used for extrusion molding, molded products obtained therefrom have excellent properties. In particular, deterioration of surface appearance of the molding product can be prevented and the molding products have excellent mechanical strength. Further, when Applicants' polycarbonate resin composition is used in combination with specific additives, the polycarbonate resin composition is also excellent in moldability and product properties.

Cogswell describes a process for producing a fibre-reinforced resin composition by drawing a plurality of continuous filaments through a melt comprising a mixture of thermoplastic polymer and plasticizer. The polymer is provided in a large amount so that the melt viscosity is reduced. The resin composition can be palletized so that it can be used for molding or extrusion.

Cogswell sets out, at col. 6, lines 1-8, that:

The thermoplastic polymers used in the process of the invention are preferably those containing aromatic repeat units in the chain, such as polysulphones, polyethersulphones, polyetherketones, polyetheretherketones, polyarylene oxides, polyarylene sulphides, aromatic polyamides, aromatic polyesters, aromatic polycarbonates and polyetherimides.

As demonstrated in Example 10 of Cogswell, a carbon fiber containing a PEEK resin composition is produced by impregnating a mixture of PEEK and diphenyl sulphone plasticizer at a weight ratio of 1:1 into a carbon fiber by using an extrusion molding machine, passing it successively under and over eight spreader bars situated in the melt, and drawing it through a sizing die of circular cross section, to obtain a product containing 38% of carbon fiber. As set forth, in the event that no plasticizer is used, in

Nakano et al.
U.S.S.N. 10/527,352
Page 12 of 14

order to impregnate the PEEK resin into the carbon fiber, pulling speed of the fiber must be reduced from 5 m/min to 0.3 m/min, and, still, there were problems of die blockage and a brake in the roving by fiber attrition at the die.

Applicants respectfully submit that while Cogswell indicates that polycarbonates can be one of the polymeric materials used as the thermoplastic polymer, Cogswell clearly does not teach or suggest a polycarbonate resin (1) having a structure of a bisphenol A unit and (2) having a specific branch chain structure and amount thereof defined by the ¹H-NMR spectra as taught by Applicants. Further, Cogswell does not teach or suggest molded products obtained by extrusion molding of the polycarbonate resin using a sizing die (claim 7). Still further, Applicants respectfully submit that Cogswell does not teach or suggest the specific mold release agents (claims 5 and 6) and UV absorbers (claims 13 and 14) taught by Applicants.

Applicants respectfully submit that even if one of skill in the art were to use a polycarbonate resin as the thermoplastic polymer in Cogswell, there is absolutely no teaching or suggestion to use Applicants claimed polycarbonate resin and in the amount claimed by Applicants. The specific polycarbonate resin taught by Applicants provides advantages over commercially available polycarbonates as demonstrated by the Examples and Comparative Examples set forth in the Applicants' disclosure.

With respect to the Office's assertion on page 4 of the Office action, that Cogswell teaches "Thermoplastic aromatic polysulphones generally have at least some units of the structure" set forth on page 4 of the Office action, wherein Y is 0 or S or the residue of an aromatic diol such as a 4, 4'bisphenol" (referring to Cogswell col. 7, lines 21-32), Applicants respectfully submit that this structure is an aromatic polysulphone and is not a polycarbonate structure. Aromatic polysulphones have essentially sulphone bonds (-SO₂-). Thus, according to the formula set forth at col. 7, lines 21-32 of Cogswell, partial sulphone bonds may directly bond with eachother (Y=0), may be replaced with "S" (namely -S- bond), or may be a residue of an aromatic diol such as 4,

Nakano et al.
U.S.S.N. 10/527,352
Page 13 of 14

4"-bisphenol (namely $\text{--O-Ph-C(CH}_3)_2\text{-Ph-O-}$ unit). However, in all of these cases, the formula is directed to aromatic polysulphones and, thus, the sulphone bond ($-\text{SO}_2-$) must be contained in the structure. Aromatic polysulphones are completely different than polycarbonates and, thus, these two different types of resins belong to completely different technical arts.

Asthana describes multilayered articles containing resorcinol acrylate polyester, and methods for their production. Asthana's multilayered articles comprise a coating layer, a substrate layer, and, optionally, an adhesive layer therebetween. These articles have a weatherable surface with high gloss and hardness due to the resorcinol acrylate polyester.

According to Asthana, the coating layer, which contains the resorcinol acrylate polyester, may comprise a blend of polymers comprising resorcinol acrylate polyester chain members and any number of other polymers, which can include a polycarbonate.

Asthana's substrate layer can function as a support layer or a "colored" layer and can comprise any number of thermoplastics, which can include a polycarbonate. As the polycarbonate, a bisphenol A structure is set forth (see paragraph [0035]). Asthana also sets forth a branched polycarbonate produced by reacting a polyfunctional aromatic compound with a dihydric phenol and a carbonate precursor. However, Asthana does not teach or suggest a branched polycarbonate produced by a transfer reaction during the reaction process.

According to Asthana, the optional adhesive layer can comprise a polycarbonate. However, there is no teaching of the type and grade of polycarbonate that could or should be used.

Thus, Applicants respectfully submit that Asthana at least does not teach or suggest the polycarbonate resin as set forth in Applicants' claims. Further, while

Nakano et al.
U.S.S.N. 10/527,352
Page 14 of 14

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Asthana mentions that UV screeners and mold release agents can be used, Asthana does not teach or suggest use of the UV screeners and mold release agents as set forth by Applicants.

In sum, neither Cogswell nor Asthana teach or suggest Applicants' claimed polycarbonate resin compositions or extrusion molding using Applicants' claimed polycarbonate resin compositions to form a molded products using a sizing die.

Accordingly, claim 1 is patentable over Cogswell and Asthana. Claims 2-14 depend from claim 1 and, thus, also are patentable over Cogswell and Asthana. Reconsideration and withdrawal of the rejections is respectfully requested.

CONCLUSION

It is believed the application is in condition for immediate allowance, which action is earnestly solicited.

Respectfully submitted,

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